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ABSTRACT

This study, which includes a review of literature and a methodology description, investigates the persistence rates of 462 Native American first-time college students enrolled in community colleges throughout Washington State in the fall of 1988. Their progress was tracked over a six-year study period. Existing data from the State Board of Community and Technical Colleges were analyzed. The results of the study indicated that the persistence rates of Native Americans were low. Factors found to be related to persistence were gender, age, enrollment status, educational aspirations and college grade point average. A significant relationship was found between enrollment status (i.e. part-time versus full-time) and persistence. Results also indicated that a significant difference existed between the grade point average of persisters and non-persisters. The study concludes that developing new techniques to increase the retention of Native American students is an important challenge to higher education. Appended is a list of variables used in the study. (Contains 110 references.) (AS)

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A Longitudinal Study of Native American Persistence in Community Colleges

Mari Lynn Kruger

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ABSTRACT

A Longitudinal Study of Native American Persistence in Community Colleges

Mari Lynn Kruger

The most underrepresented minority group in higher education is the Native American. This study investigated the persistence rates of 462 Native American first-time college students enrolled in community colleges throughout Washington State in Fall, 1988. Their persistence and progress were tracked over a six-year study period. Existing data from the State Board of Community and Technical Colleges were analyzed. Common statistical measures were employed for analysis as well as t-tests and chi-square analysis. Differences along a multitude of variables were examined for persisters and non-persisters. The results of the study indicate that the persistence rates of Native Americans were low. Factors that were found to be related to persistence were gender, age, enrollment status, educational aspirations and college grade point average. It was concluded that enrollment status (i.e. part-time versus full-time) and persistence were significantly related. Results also found a significant difference between the grade point average of persisters and non-persisters. Developing new techniques to increase the retention of Native American students is an important challenge to higher education.

TABLE OF CONTENTS

ABSTRACT iv
ACKNOWLEDGMENT v
LIST OF TABLES viii

CHAPTER
I. INTRODUCTION 1
Background 1
Need for the Study 2
Significance of the Study 3
Statement of the Problem 5
Summary 6
II. REVIEW OF THE LITERATURE 7
Introduction 7
A Theory of Student Departure 8
Validation of Tinto's Model 12
Why Students Leave Higher Education 13
Retention of People of Color 17
Factors Related to Persistence of African-Americans 23
Factors Related to Persistence of Hispanics 25
Factors Related to Persistence of Native Americans 28
Demographics of Native Americans in Higher Education 36
Background Data on Washington's Community Colleges 39
Summary 41
III. METHODS 42
Introduction 42
Population and Sample 42
Data Collection 43
Data Analysis 44

TABLE OF CONTENTS

CHAPTER

IV. RESULTS 45
- Introduction 45
- Demographic Variables 45
- Enrollment Patterns 48
- Persistence and Retention 51
- Student Progress 54
- Other Findings 56
- Summary 57

V. DISCUSSION 58
- Introduction 58
- Discussion of Findings 58
- Implications 61
- Limitations 62
- Suggestions for Further Research 62
- Summary 64

REFERENCES 65

APPENDICES 79

LIST OF TABLES

TABLE 1 Demographics of Persisters, Non-Persisters and Total.....47

TABLE 2 Enrollment Variables.....50

TABLE 3 Total Quarters Enrolled Over a Six Year Period.....52

TABLE 4 Group Percentages by Quarters Enrolled.....53

TABLE 5 Persistence of Total Cohort Over Six Year Period.....53

TABLE 6 Student Progress.....56

CHAPTER ONE

INTRODUCTION

Background

The most underrepresented group of students of color in higher education today is the American Indian and Alaska Native (hereafter identified as Native American). Researchers have indicated that the education of Native Americans is dismal (Rhodes, 1990). Only 6% of Native Americans have completed four years of college or more, compared to 12% of African-Americans and 23% of Caucasians (Astin, 1982).

Among ethnic groups, Native students experience the highest drop-out rates; specific estimates range from 75-93 percent (Astin, 1982; Benjamin, Chambers, Reiterman, 1993; Falk & Aitken, 1984; Kleinfield & Kohout, 1974; Lin, LaCounte & Eder, 1988; Mow & Nettles, 1990; Tijerina & Biemer, 1987/1988). Such a high drop-out rate indicates a failure of institutions to meet the educational needs of this unique population.

Developing new techniques to increase the retention of Native American students is an important challenge to higher education. Native Americans are the least likely to be retained. They are also the least likely ethnic group to be studied by researchers of student attrition. The purpose of the study is to explore the attrition phenomenon of Native American students in two-year institutions in Washington State and to identify factors associated with such attrition.

Need for the Study

The major share of the enrollment growth of students of color in higher education in the United States will occur at two-year institutions. For many students of color, community colleges continue to be the major point of entry to post-secondary education. Two-year colleges have higher attrition rates than four-year colleges (Astin, 1982; Lee & Frank, 1990; Pascarella & Terenzini, 1992). According to Moyer (1973) only one-half of the students of color in higher education successfully complete the first two-years of college. As previously alluded to, this rate is even lower for Native Americans. Retention rates of students of color at two-year institutions and transfers from these institutions are low in comparison to whites (Astin, 1982). Native Americans are effected because over 50% of these students are enrolled in two-year colleges (Hodgkinson, 1990; Mow & Nettles, 1990).

Research has developed student attrition models seeking to identify causes that affect student drop-out (Bean, 1980; Cabrera, Nora, & Castaneda, 1993; Tinto, 1975, 1987). Similarly, a growing body of studies has emerged in the literature regarding the phenomenon of minority drop-outs and factors that might affect persistence among these groups of students (Allen, 1988; Astin, 1982; Attinasi 1989; Nora & Rendon, 1989).

To date, there is minimal research available that focuses on the retention rates of Native-American students in higher education and factors related to persistence. Moreover, the scant information that is

available primarily focuses on this population in four-year colleges and universities and the bulk of this research has been conducted at single-sites with very small samples (Mow & Nettles, 1990; Nora, 1993).

This has become a problem for those studying this population in higher education (Astin, 1982; Fries, 1987; Wells, 1989). In a national study of students of color in higher education, Astin (1982) reported that the sample of Native students "was often so small as to raise serious questions about the reliability of the results" (p. 23). Furthermore, Fries (1987) in a report on Native American college students found that "most sample surveys are either too small to produce reliable estimates for American Indians, or Indians are grouped into an 'other' category" (p.31). The present study of several hundred Native American students in twenty-six community colleges throughout Washington State is both needed and timely.

Significance of the Study

Nationally, the Anglo population is increasing in age and becoming less available in the workforce. The demographic trends for people of color show that this group is becoming young and is increasing in numbers (Cibik & Chambers, 1991; Wilson & Justiz, 1988). The birth rate of Native Americans is rapidly increasing and the number of college-age (18-24) students has more than doubled (Tijerina & Biemer, 1987/1988). In the 21st century, the United States population will need to rely on workers of color to sustain their present quality of life.

These workers must be able to meet businesses' provision of a highly skilled labor force given technological advances. The economy will rely on people of color to contribute toward its endeavor of maintaining global competitiveness. Thus, it is imperative to ensure that students of color are retained.

This study focuses efforts towards that endeavor by contributing to the body of research and knowledge on retention of students of color, specifically focusing on Native Americans. In addition, the study will establish research on the persistence of Native American students in a multitude of two-year institutions over an extended period of time where the bulk of this population enrolls.

The Pacific Northwest has a rich Native heritage. Washington state is one of six states where the majority of Native Americans in the United States live (Statistical Abstracts of the United States, 1994). No researcher has sought to examine the retention of Native Americans in higher education in this region over an extended period of time. The outcomes of this study will help educators in Washington state understand the persistence patterns of this forgotten population. Student Affairs personnel, through their student development programming, academic advising, tutorial efforts and other support services such as counseling, are particularly vested in such outcomes. The identification of factors that predict the success of these students will assist all those involved in the higher education enterprise with retention efforts for students of color.

An assumption made is that if we determine the nature of attrition of this population in Washington state, we can begin to work towards efforts to retain not only the Native American population but other ethnic populations in Washington State as well.

Statement of the Problem

The retention of Native American students in higher education is a serious concern. Native American students have lower rates of persistence than any other ethnic group in higher education. Over 50% of Native Americans who enroll in higher education begin their post-secondary education at two-year institutions (Hodgkinson, 1990; Mow & Nettles, 1990). And while it is suggested that certain indicators have an impact on the success of Native American students, this study seeks to investigate the persistence rates of Native American students in two-year institutions in Washington State and possible causal factors associated with such persistence.

Research will focus on a cohort of Native Americans who were enrolled in Washington's community colleges for the first-time in Fall, 1988 and track their persistence through Spring, 1994. Several variables identified in the retention literature will be examined. The researcher seeks to determine such research questions as: What is the persistence rates of Native American students in community colleges of Washington state? What are potential factors related to persistence of Native Americans?

Summary

The most underrepresented of the targeted minority group in higher education today is the Native American. Thus, it is necessary to gain a better understanding of the college-going behaviors of these students and the characteristics of those who persist and those who do not. This study will contribute to that understanding. The following chapters will consist of a review of relevant literature, a description of the methods and results of the study, and will conclude with a discussion of the study's findings and suggestions for further research.

CHAPTER TWO

REVIEW OF LITERATURE

Introduction

A voluminous body of research on retention in higher education exists. Over the past decade, studies examining the retention of people of color have flourished. The majority of these studies have been conducted using populations in four-year institutions. This inclusive focus creates a hole in our understanding of students of color because the majority of these students in higher education attend two-year institutions.

Although the research on students of color in higher education and factors found to affect their persistence is expanding, there is much we do not know (Tinto, 1987). The least is known about Native American students. For the purposes of this study, the literature review will focus on retention research, specifically on retention in higher education. Areas covered include a review of a widely used theory of student departure and a general look at why students leave higher education. In addition, factors found to affect persistence of African-American, Hispanic, and Native American students will be addressed. Moreover, the current demographics of Native Americans in higher education will be explored. Finally, the researcher will include a background section on the characteristics of students in Washington's community colleges.

A Theory of Student Departure

Student departure has been a much studied phenomenon. Few issues in higher education have received as much attention (Astin, 1972; Bean, 1980; Cope & Hannah, 1975; Nora, 1987; Pantages & Creedon, 1978; Pascarella & Terenzini, 1980; Ramist, 1981; Spady, 1970, 1971; Summerskill, 1962; Tinto, 1975). In an effort to bring coherence to a voluminous body of research on retention, Vincent Tinto introduced a model of student attrition that attempts to explain the motivation of students who leave colleges and universities. Over the past decade, Tinto's theoretical model of student departure (1975, 1987, 1993) has guided much of the inquiry into student persistence.

Building on the work of Spady (1970, 1971), Tinto's theory is advanced as a longitudinal process that focuses on the interactions between a student's pre-entry attributes and dispositions (i.e., goals and commitments) and the academic and social systems of the institution to arrive at a decision of student departure. A negative fit between the student and the institution will result in a decision to leave.

Pre-college characteristics

The basic premise of the theory is that students come to college with certain pre-college characteristics. Such attributes are a student's family and community background, a variety of personal traits (e.g., age, sex, race and disabilities), and intellectual and social skills. Other pre-college characteristics include financial resources and various

educational experiences and achievements like the high-school grade point average. Each attribute is presumed to have a direct impact on an individual's decision to depart because of the "well-documented effect on levels of academic performance in college" (1993, p.115).
Furthermore, family background is a key component of these pre-college characteristics. Family background includes parental education and encouragement from family and friends. This component has an indirect impact on the goals and commitments a student has when arriving at the institution.

Goals and Commitments

The above characteristics indirectly help formulate the goals and commitments that students initially bring with them to college. Goals and intentions are the level of degree attainment or occupation a student desires. Commitment means the level of commitment to the goals (goal commitment) of graduation and to the institution that the student initially enrolled in (institutional commitment).

Along with external commitments the student brings with them to the college environment, such as work or family, these goals and commitments describe the orientation the student will have regarding educational continuance and establishes the later interactions and experiences between the student and members of the college or university.

Institutional Experiences

Given individual characteristics and dispositions at entry, the model holds that subsequent experiences and interactions with other members of the institution constitute the probability of the student to persist or not. It argues that interactions with the academic and social systems of the institution both formally and informally have a direct impact on student departure. Interactions and experiences with the academic system include the academic performance of the student (formal) as well as informal discussions and meetings with the faculty and staff at an institution. Tinto (1993) revised his earlier models to reflect the importance of student interactions with faculty and staff toward decisions of educational continuance.

Additionally, the model reasons that students' interactions with the formal social system of the institutions such as involvement in extracurricular activities and peer group interactions, considered by the model to be the informal social system, to be equally critical toward decisions of student departure. The more a student has interactive experiences with other students, the more likely it is that the student will positively integrate academically and socially to the institution. Such integration is believed to have a direct impact on student departure.

Integration

The main thesis of the model is that the ability of the students, who come with individual pre-college attributes and dispositions that impact

on their initial goals and commitments, directly affects the subsequent interactive experiences with the formal and informal social and academic (intellectual) systems of the institution. This in turn directly impacts the students' disposition to integrate to the social and academic (intellectual) life of the institution. Integration to those institutional systems has a direct impact on a decision of student departure. In other words, the ability to integrate both socially and academically positively relates to a student's likelihood of persisting to degree completion.

Positive social integration is influenced by greater contact with peers and faculty. Furthermore, positive integration serves to heighten one's goals and strengthen one's commitment to those goals and to the commitment to the institution. As Tinto (1993) himself suggests, "the model posits that, other things being equal, the lower the degree of one's social and intellectual integration into the academic and social communities of the college, the greater the likelihood of departure" (p. 116).

External Commitments

One final component of the model that could affect persistence is the degree in which the individual has commitments to communities external from the institution. This is often the case for commuting students who may feel pulled away from the campus because of family or work responsibilities, thus having a negative indirect affect on persistence (p. 116). While at the same time, such external communities

could have a positive indirect influence on a students' decision to persist when the family gives the student strong support and encouragement (Bean & Vesper, 1992).

Validation of Tinto's Model

As previously alluded to, Tinto's model of student departure has withstood the test of time. A review of the literature indicates that this model is the most widely researched theory on student retention and findings from such research indicate general support for the conceptual framework of the model (Aitken, 1982; Baumgart & Johnstone, 1977; Bean, 1980, 1982, 1983; Munro, 1981; Pascarella & Chapman, 1983; Pascarella and Terenzini, 1979, 1980, 1983; Terenzini and Pascarella, 1977, 1978, 1980; Terenzini et al., 1983). As Stage (1990) has noted, "Today few would question that students' commitment, academic integration, and social integration are crucial to their academic success" (p. 250).

However, the model has not totally escaped criticism. Tinto himself would be the first to admit that his model is not perfect. For example, because the model initially was formulated with traditional students in mind, adult students may not fit the model as outlined. Moreover, the model may not take into account the individual differences of certain subgroups of the general student population. Tierney (1992) is concerned with the question of social integration and the assumption that Tinto seems to make regarding conformity to the mainstream

environment as the norm. He states, "A model of integration that never questions who is to be integrated and how it is to be done assumes an individualist stance of human nature and rejects differences based on categories such as class, race, and gender" (p. 611). He goes on to say, "...essentially models of integration have the effect of merely inserting minorities into a dominant cultural frame of reference that is transmitted within dominant cultural forms, leaving invisible cultural hierarchies intact" (p. 611).

Why Students Leave Higher Education

Early research on attrition tended to label anyone who left higher education as a "dropout." Today, the issue is much more complex. Students leave for a variety of reasons. Some students begin their college education with no intention of receiving a college degree. Many others will transfer between institutions. Increasingly students are attending part-time and revolving in and out of higher educational institutions. This is particularly common among community college students.

Tinto (1993) defines several types of departure from higher education:

institutional departure, or departure from individual institutions

system departure, or departure from the wider system of higher education

immediate transfer, or departure from one institution to transfer to another higher education institution

stopouts, or temporary withdrawal from the system

Tinto (1993) states that "such diversity of college entry makes the estimation of rates of student departure, institutional and systemic, a very difficult task" (p. 9). He estimates that for four-year and two-year colleges respectively, "27% of all four-year and 40.7% of all two-year entrants left their first institutions prior to the start of the second year" (p. 17).

It is important to mention that a student's departure from an institution of higher education should not automatically be viewed in a negative manner. Tinto (1987, 1993) warns that in "speaking only of departure from college we may inadvertently undervalue the importance of the education which goes on outside the formal boundaries of our higher educational system" (p. 211). He contends that leaving college does not necessarily conclude that one will not partake of other forms of education later. He supports the belief that education is a lifelong process that does not end when attendance in college ceases.

Tinto's model of student departure (1975, 1987, 1993) distinguishes between two forms of withdrawal: academic dismissal and voluntary withdrawal. The latter is more common. Tinto (1993) estimates that only 15 to 25 percent of institutional departure occur because of academic failure. While academic failure is generally related to the academic performance of the student, issues surrounding voluntary

withdrawal are related to the student's level of congruence to the academic and social communities of the institution after entry.

Academic failure is one reason why students decide to depart from higher education. Astin (1975) found academic failure to be tied to inferior high school grades. However, this is not as complex a phenomenon as is departure for reasons related to voluntary withdrawal. Scholars of student retention have identified several factors associated with a student's decision to leave. Very prominent among these reasons are those primarily unrelated to the college or university attended. Such individual reasons include: sickness or injury, lack of encouragement from friends and family, unclear educational goals, lack of institutional commitment, difficulty coping with change, and familial obligations (Bean, 1980; Cabrera, Nora & Castaneda, 1993; Christie & Dinham, 1991; Tinto, 1987, 1993). Astin (1975) reported being married was positively associated with departure for women, while it was negatively associated with departure decisions for men. Tinto (1993) speculates that this is largely to do with societal values of women and their roles within the family.

A second major grouping of reasons given for voluntary student withdrawal focus on financial concerns. Students cited a lack of financial aid, little or no fiscal support from family and difficulty juggling work responsibilities and classes as reasons for leaving (Bers & Smith, 1991; Cabrera, Nora & Castaneda, 1992; Chaney & Farris, 1991; Stampen & Cabrera, 1986; Tinto, 1987, 1993). Tinto (1993) cautions that "citing

financial problems as reason for departure is often merely an end product of decisions regarding departure" (p. 67). He goes on to say, "it reflects the weighing of benefits as well as of costs and as such mirrors, the nature of the students' academic and social experiences on campus" (p. 67).

Pascarella and Chapman (1983) found that few variables that significantly affect student attrition are found to be manipulable by the institution. However, a review of the literature indicates that there are variables that can be more closely attributed to the institutions than can individual and financial reasons. For example, some students report an inability to register for their desired classes, or dissatisfaction with the academic program (Neumann & Neumann, 1989). Neumann, et.al. (1989) studied juniors and seniors at a major northeastern university in an effort to identify factors that contribute to their persistence. They found that students' dissatisfaction with the level of student-faculty contact and the quality of course content and instructional activities contributed to a student's decision to withdraw. Others report dislike with their academic progress and lack of adequate study skills (Bean, 1980; Chaney & Farris, 1991; Richardson & Bender, 1987; Tinto, 1987, 1993).

Another major grouping of findings on why students leave higher education are associated with problems adjusting to the college or university environment: socially or academically; because of the location of the institution; or because of cultural factors, especially for students of color (Bers & Smith, 1991; Cabrera, Nora & Castaneda, 1993;

Christie & Dinham, 1991; Mow & Nettles, 1990; Richardson & Bender, 1987; Tinto, 1975, 1987, 1993). Others cite that readiness for college was a factor (Terenzini & Pascarella, 1980; Tinto, 1987).

Final reasons for voluntary student withdrawal include a student's desire to transfer to another higher education institution and meeting his or her objectives (Tinto, 1987, 1993).

Summary

Students withdraw from higher education for a myriad of reasons. Most prominent are academic failure, individual reasons and financial reasons, institutional reasons such as dissatisfaction with academic programs, or incongruence with the social or cultural environment.

Retention of People of Color

The issue of retention has been given great attention by academic scholars both for altruistic and self-serving reasons. On the one hand, institutions are interested in assisting students to fully develop both psychologically and intellectually, and they are interested in contributing to an educated workforce. On the other hand, the interest is a practical one in which considerations are given to maintaining enrollments to keep institutional budgets fiscally sound. There is also an interest on the part of the individual student. Individuals are interested in retention because of the promise of overall benefits bestowed upon a college graduate (Bers & Smith, 1991; Neumann & Neumann, 1989).

Because students of color are the least likely to persist, it is of no wonder that time and energy have been invested in the undertaking of understanding why these students leave higher education. Over the past decade, much retention research on students of color has been conducted. Most of this research has focused predominantly on African-Americans at single four-year institutions. A review of the literature indicates that there are important factors that are shown to cause departure of people of color.

Tinto postulates that students of color experience the college or university differently than do white students. For the purposes of this review, an outline of general factors found to be associated with persistence for these students will be presented. Next, will come a review of factors shown to affect persistence of African-Americans, Hispanics, and Native Americans in particular. Overall, these three have been found to have the highest attrition rates.

African-Americans, Hispanics and Native Americans are consistently found to depart from college at much higher rates and to obtain baccalaureate degrees at much lower rates than their white counterparts (Astin, 1982; Cibik & Chambers, 1991; Mow & Nettles, 1990; Tinto, 1993). Astin (1982) estimated retention rates to be significantly lower for Hispanics (31- 42 percent) and Native Americans (39 percent) than African-Americans (42 - 53 percent) and Whites (56 - 59 percent). To arrive at these estimates, Astin drew the percentages of entrants completing colleges from three sources: Current Population

Studies percentages of persons aged 25 to 29 who had completed four or more years of college, CIRP surveys of 1971 freshmen followed up in 1980, and National Longitudinal Study data on the 1976 status of 1972 high school graduates who entered college.

Many of the factors contributing to high attrition rates may not be under the control of the student nor the institution. Factors such as poverty, low academic preparation, poor study skills, no academic preparatory courses in high school, parent's who have no formal education, and lack of role models all are difficult obstacles to overcome by colleges and universities (Astin, 1982; Loo & Rolinson, 1986; Mingle, 1987; Mow & Nettles, 1990; Nora, 1993; Nora & Rendon, 1989).

Initial educational aspirations of a baccalaureate degree have been found to be positively associated with persistence of minority students (Astin, 1982; Mow & Nettles, 1990; Nora, 1993; Ramist, 1981). Astin (1982) found that student's educational aspirations positively influenced college performance and persistence. Other pre-college factors include gender and age. Astin (1982) found that for all groups except for Native Americans and Hispanics, being a woman is positively related to persistence. However, Patton (1972) found being a Native American woman to be positively related to persistence. In terms of age, Astin (1982) states that the relatively older students show somewhat poorer rates of undergraduate persistence among African-Americans and Chicanos.

Environmental factors are a second major grouping. According to researchers, students of color who receive financial aid in the form of grants or scholarships, and do not work at an outside job are more likely to persist (Astin, 1982; Mow & Nettles, 1990; Nora, 1993). Cibik & Chambers (1991) in a study of similarities and differences among African-Americans, Hispanics, Native Americans and Anglos at a predominantly white undergraduate institution in the Southwest, reported that students of color cited the availability of finances as the greatest obstacle for completing college degrees.

A lack of academic integration, partially attributed to minimal faculty-student contact and low academic abilities, is another factor associated with persistence (Fox, 1985; Tinto, 1987; Tracey & Sedlacek, 1987). Fox (1985) cited that retention was found to be directly related to academic integration.

Chief among environmental factors is the type of institution a student initially attends. Astin (1982), in a study of students of color in higher education using national longitudinal data, found a negative correlation between a student's chances of attaining a baccalaureate degree and initially attending a community college. These findings confirm earlier findings showing a negative relationship between enrolling in a community college and achieving a bachelor's degree (Astin, 1975, 1977).

This is especially significant for students of color as noted by Richardson and Bender (1987) "...access to four-year institutions for almost half of all minority students currently participating in higher education requires transfer from a two-year to a four-year institution" (p. 17). Moreover, for Hispanics and Native Americans specifically, the type of institution is even more important because researchers commonly attribute the lower retention rates of Hispanics and Native Americans to their high concentration in community colleges (Astin, 1982; Richardson & Bender, 1987). Others cite factors such as private institutions and small enrollments as positive predictors of persistence (Astin, 1982; Mow & Nettles, 1990).

Very prominent among factors shown to predict persistence of students of color are those socioculturally grounded. Researchers have often identified "isolation" and racial bias as problems. To paraphrase the work of Tinto (1993), students of color are particularly vulnerable to isolation and marginality at large white institutions where the opportunities to become a member of a community composed of students like themselves are minimal. Under Tinto's model, peer group interaction is especially important to the ability to integrate socially. Cibik & Chambers (1991) state that for "many minority students at predominantly white institutions, the necessary social, cultural, and mental adjustments are simply insurmountable" (p. 130).

Loo & Rolison (1986) agree with this point. The researchers studied ethnic minority and Anglo students at a predominantly white

institution to assess the scope of alienation among students of color and to determine whether the alienation reported by these students differed from that of Anglos. The study's sample constituted 76% non-White (N=109) and 33% (N=54) white students. Over representation of students of color was intentional to gain a better understanding of this population's attitudes. Their findings indicate that the sociocultural alienation of non-White students was greater than that of White students and the ways in which alienation was experienced was through feelings of cultural domination and isolation.

In summary, factors that have been shown to affect persistence of students of color are pre-college characteristics, environmental factors and sociocultural factors. Pre-college factors include poor academic preparation, low family income, and parental education. Environmental factors include financial resources, academic integration and institutional type. Most prominent are sociocultural factors and feelings of alienation and isolation.

It is important to note that while a review of general factors found to affect persistence of students of color can be helpful to an institution dealing with retention, it does not serve these students well to stereotype all ethnic groups or individuals within such groups as being affected equally by such factors. Steward, Germain & Jackson (1992) affirm this notion by underscoring the importance of "uniquely addressing each racial and ethnic group" (p. 155). In an effort to do this, the next three sections will consist of a closer examination of factors that affect

persistence of three ethnic groups: African-Americans, Hispanics, and Native Americans.

Factors related to persistence of African-Americans

Studies on retention of students of color have focused primarily on African-Americans. While this review is not intended to be comprehensive in scope, the review will reveal primary factors identified in the research to affect persistence.

Perhaps the most single cited factor related to African-American student persistence is the suggestion that withdrawal is significantly correlated to academic problems (Donovan, 1984; Eddens, 1982; Myron, 1983; Sedlacek & Webster, 1978). Several researchers have found contrasting results. For example, Tracey and Sedlacek (1987) found that doing well in college has little bearing on remaining enrolled for African-American students. This is consistent with findings from Cibek & Chambers (1991) and Pascarella & Terenzini (1985).

Non-cognitive variables have been found to be predictive of persistence among African-American students. In comparing the persistence of White and African-American students, Tracey & Sedlacek (1987) found that non-cognitive variables were more predictive of persistence for African-American students than for White students. Those dimensions include having a positive self-concept, a realistic self-appraisal of their academic needs, preferring long-term goals over immediate desires, and having some leadership experience. Moreover,

findings indicated that participating in extracurricular activities such as the student government was positively related to persistence for African-American men. Nettles, Thoeny & Gosman (1986) cited that persistence was dependent on motivation and goals, and satisfaction.

Other studies have identified social integration to be a significantly stronger predictor of persistence than academic integration for African-American students. Pascarella's (1985) study of racial differences in the factors associated with bachelor's degree completion using a sample in a nine-year follow up, found that social integration was twice as important in predicting degree completion compared to academic integration for African-American students.

Many studies of African-American students at predominantly white institutions report findings that indicate that African-American students feel isolated and alienated to a much larger degree than do White students (Allen, 1988; Nettles & Johnson, 1987; Tinto, 1993). Donald Smith (1980, 1981) identified alienation and loneliness as the most common factors in African-American student attrition as expressed by students, African-American faculty, and administrators. Peer support has also been identified as a factor of African-American student persistence (Allen, 1988; Galicki & McGewin, 1989; Myron, 1983; Tinto, 1987).

Final factors believed to have an impact on African-American persistence are institutional factors such as type and predominant race. Unique to African-Americans is their enrollment in traditional black colleges. There seems to be a relationship between African-American

students' persistence and these institutions but the findings are inconclusive. Fleming (1984) found that African-American students at black colleges have higher levels of psychological adjustments than do African-American students on white campuses. Allen (1988) found that African-American students at black colleges were more likely to aspire to graduate degrees than African-American students on white campuses. Nettles (1988) discovered that African-American students at black colleges had higher retention rates and faster progression rates than African-American students at white institutions.

In contrast, Nettles (1988) also found students at black colleges to be less satisfied with their academic programs. Similarly, Astin (1982) found that attending a traditional black college diminishes the chances of completing a degree and has negative effects on undergraduate satisfaction. Pascarella (1985) found that attending a predominantly black college has no positive nor negative influence on persistence.

Factors related to persistence of Hispanics

Substantially less is known about Hispanics in higher education. Like African-Americans, Hispanics are less likely to go to college and if enrolling take longer to complete degrees. In addition, they withdraw at higher rates than do Blacks or Whites. However, it must be cautioned that differences exist in the rates of entry and persistence among the many Hispanic subgroups. For example, 18.5% of Cubans completed

four years of college or more compared to 6.2% of Mexican-Americans (Bureau of the Census, 1992).

Some persistence studies have identified 'background' factors such as poor academic preparation, lack of enrollment in science and math courses, parents' educational and occupational status, and lack of financial resources to be predictive of persistence for this group (Astin, 1982; Astin & Burciaga, 1981; Attinasi, 1989; Mow & Nettles, 1990; Nora & Rendon, 1990). Moreover, many Hispanics are first-generation college students. Consequently, Hispanic parents lack critical information on college admissions, program availability, and financial aid. However, lack of knowledge should not be interpreted as lack of educational support (Nora & Rendon, 1990).

Attinasi (1989) in a study of Mexican Americans' perceptions of university attendance found that significant others such as friends and family had an impact on a student's decision to enter college and subsequently on Mexican Americans' decision to stay. That is, that students' pre-college opportunities to be exposed to modeling and to experiences related to college going are related to a student's decision to enroll and to persist. The study's findings also suggest that a student's level of anticipatory socialization impacts persistence in the form of defining educational goals and forming decisions of whether to go to college, which have been shown to positively impact persistence of Hispanic students.

Further studies explored factors after enrollment. Findings from these studies indicate that Hispanic students' goals and institutional commitment, and encouragement from family, faculty and staff positively affect persistence. Additionally, the number of credit hours enrolled is a factor found to be associated with persistence (McCool, 1984; Nora, 1987; Nora, 1993; Nora & Rendon, 1990).

Nora (1987) found that among a large sample of Chicano community college students, the commitment to the goal of completing college and the resolve to complete it at a chosen institution, was significantly more important in predicting retention than were the factors of academic and social integration. Students with higher levels of educational goal commitment and institutional commitment had higher levels of retention.

In addition, she found that students who had higher levels of goal and institutional commitment were enrolled in more semester hours and were more likely to have a form of credential. This is in contrast to Tinto who said that initial goal commitment did not directly affect persistence. Moreover, Nora's study showed that students with higher grades had more encouragement from their instructors and counselors and had higher initial goal commitments.

Finally, as previously stated, the type of institution has been found to affect the level of bachelor's degrees that Hispanics receive because the majority of Hispanic students began their college education at a two-year college and transfer rates from these institutions are low

(Astin, 1982; Mow & Nettles, 1990; Nora, 1993). Furthermore, findings of a study of urban community colleges indicate that students who were disengaged or isolated from the colleges' academic and social arenas showed fewer inclinations to develop transfer behaviors (Cohen, Brawer & Bensimon, 1985).

Factors related to persistence of Native Americans

Among studies of retention or persistence of students of color, the least is known about Native Americans. From what little focus has been given on this population, we know that they are the most underrepresented ethnic group in our colleges and universities. As a whole, Native Americans have achieved the lowest educational levels among all racial minorities (Wright, 1991). The following explanations have been given for such disproportion's.

In 1969, the Senate Subcommittee Report on Indian Education, also called the Kennedy Report, attributed the problem to inadequate academic preparation, lack of motivation and lack of encouragement from teachers and counselors toward college aspirations, financial difficulties, and challenges in adjusting to the college environment (cited in Wright, 1991).

Although twenty-six years have past since the report was issued, the factors that had an impact on academic failure appear to remain much the same today. Researchers have repeatedly cited several factors that contribute to the problem: personal reasons, poor academic

preparation and educational skills, language fluency, financial difficulties, institutional climate, lack of role models, lack of adequate support services, and cultural conflict. The focus of this section is to examine those factors that have been found to have an impact on Native American students' persistence. Although not meant to be exhaustive in scope, the following review will be representative of the nature of the barriers and factors that affect the college-going behaviors of this important population.

Individual reasons are frequently cited by researchers. These reasons include substance abuse, health, educational aspirations, self-concept, personal motivation, parents' educational level, family and community background, encouragement from friends and family, goal commitment and lack of long-range goals and career goals (Benjamin, Chambers & Reiterman, 1993; Falk & Aitken, 1984; Gilliland, 1986; Guyette & Heth, 1984; Lin, LaCounte, & Eder, 1988; McIntosh, 1987; Mow & Nettles, 1990; Nora, 1993; Osborne & Cranney, 1985; Pavel, 1991; Pavel & Padilla, 1993; Rindone, 1988; Wells, 1989; Wright, 1991). Finally, Whittaker (1986) found marital status to be positively related to persistence.

Gender and age factors have also been found to be related to persistence. However, the findings on gender to be predictive of student success are inconclusive. Astin (1982) found being a female to be negatively related to grade point average and persistence, while Patton & Eddington (1973) found being a woman to be positively associated

with grade point average and persistence. The results of studies on age suggest that traditional students do better and persist more than non-traditional students (Astin, 1982; Patton & Eddington, 1973).

One of the most frequently cited factors related to persistence of Native Americans is inadequate academic preparation. The skill level at entry is significantly less than their non-Native peers (Wright, 1991). Native students have been cited as having poor skills in English language, reading and writing and the skill level becomes worse at college-going age (Wright, 1991). Researchers "found not only that Indian students achieved well below white students but that they fell further behind as the higher grades were reached" (McNamara, 1984, p. 141). Other factors cited that are associated with inadequate academic preparation include poor high school preparation and poor study habits (Falk & Aitken, 1984; Guyette & Heth, 1984; Lin et al., 1988; Pavel, 1991; Tijerina & Biemer, 1987/1988; Wells, 1989).

Astin (1982) found that high school grade point average was the best predictor of the college grade point average and an even stronger predictor for Native Americans. Patton & Eddington (1973) found that a higher college grade point average was positively related to persistence. However, Huffman, Sill, & Brokenleg (1986), in a study of college achievement among Sioux and white South Dakota students found that high school grade point average was not found to be a factor of persistence.

The most frequent reason for Native American students' attrition cited by researchers and students alike is financial difficulties (Astin, 1982; Falk & Aitken, 1984; Guyette & Heth, 1984; Lin et al., 1988; Mingle, 1987; Mow & Nettles, 1990; Nora, 1993; Tijerina & Biemer, 1987/1988; Wells, 1989; Wilson, 1983; Wright, 1991). The problems are compounded for Native American students because many live in poverty and in communities with high unemployment rates. Most students do not receive support from their parents nor do they have their own resources. Thus, they cannot meet the expected personal and familial contributions usually required by financial aid package guidelines.

In addition, because many of the students are older, they often have familial obligations of support, and thus have limited resources to put toward their education. Also, lost wages to a family while a student is in school is another consideration (Guyette & Heth, 1984; Wright, 1991). Furthermore, the situation becomes more problematic when the primary sources of funding, tribal scholarships and the Bureau of Indian Affairs (BIA), have not kept up with the increased costs of education as well as the increased demand. Moreover, Congress has been cutting federal financial aid funds for grants, further worsening the condition (Tijerina & Biemer, 1987/1988).

Astin (1982) in a longitudinal study of students of color in higher education found that grants and scholarships are positively related to persistence of Native Americans. Mendoza & Samuels (1987) findings

from an evaluation of intervention activities at a community college in Arizona suggest that first-time students of color who do not apply for financial aid are at greater risks for attrition.

Another major grouping of factors that affect persistence is the institutional climate or environment. Factors in this grouping include encountering hostile environments; experiencing feelings of alienation and isolation; lack of role models; difficulties integrating academically and socially; administrative support; and inadequate student support services (Beaty & Chiste, 1986; Browne & Evans, 1987; Falk & Aitken, 1984; Tijerina & Biemer, 1987/1988; Wright, 1991).

Lin et al., (1988) in a study on the effect of school environment on academic performance and graduation expectation of Native American students found that the factors that most significantly had a bearing on persistence were feelings of hostility against the Native Americans on campus and the feelings of isolation and alienation.

Lack of Native role models in both the institution and the community has been found to negatively affect the persistence of Native students (Guyette & Heth, 1984; McIntosh, 1987). Guyette & Heth (1984), in a nationwide assessment of higher education needs of Native Americans, surveyed institutions, communities, and students. Four items identified by all three groups as major causes of Native American student drop-outs include: lack of previous educational skills, *lack of role models*, financial difficulties and cultural pressures especially at doctorate granting institutions.

Falk & Aitken (1984) in conjunction with the Minnesota Chippewa Tribe, attempted to identify factors that promote retention of Native American college students. Interviews were conducted with 125 students and 11 college personnel from several colleges and universities. One hundred percent of the educators reported that Native faculty and staff were very important or at least somewhat important to student success and retention. Edwards, Edwards, Daines & Reed (1984) reported that "modeling can be beneficial in recruiting American Indian women students and sustaining their academic achievement at institutions of higher education" (cited in Wright, 1991, p. 7).

Native American students' values, learning styles, and communication styles are often different from the institution's and their non-Native peers. These differences make it difficult, if not overwhelming for Native students to successfully integrate academically and socially into the institution (Osborne & Cranney, 1985). "The whole Western philosophy of education is an institution ordered according to different rules than their own" (Beaty & Chiste, 1986, p. 7).

Such differences include valuing the needs of the group over the individual, communicative styles that are less participatory and more reflective, and learning styles that are holistic versus linear (Beaty & Chiste, 1986; Benjamin, Chambers & Reiterman, 1993; Browne & Evans, 1987). Other findings indicate that Native Americans are found to go home more often for personal reasons such as tribal ceremonies and family responsibilities, which have a negative effect on attendance and

academic outcomes, and they are less likely to persist at relatively large institutions (Cibek & Chambers, 1991).

The factor that has an effect on persistence perhaps more than any other item related to institutional climate is cultural conflict. Mow & Nettles (1990) reported that "several studies show that they (Native college students) encounter difficulties in making cultural adjustments to predominantly white institutions. What these cultural difficulties are, however, and how they relate to college success and failure are unclear" (p.88). Students are forced to assimilate into the mainstream culture in order to fully integrate academically and socially. Academic and social integration have been found by researchers to directly affect persistence. Such acculturation requires often times that they reject or reduce ties with their Native culture. Researchers reported that "Native American students believe they are threatened with losing their "Indianness" through absorption into the "mainstream" college setting. As a result, many of these students leave school" (Huffman, Sill & Brokenleg, 1986, p.33). Scott (1986) concludes that "many Indian students would not consider dropping out of school a mark of failure" if dropping out meant retaining their cultural identity (p. 393). The students who are most successful are those who have struck a balance between maintaining their sense of cultural identity and operating in the mainstream culture of the institutions (Hornett, 1989).

Final factors that have been found to positively affect persistence of Native American students is high administrative support, faculty

interaction and mentoring, and the availability of quality student support programs. Student support programs include academic support services such as tutoring and special remedial courses and workshops, counseling support services and student clubs and student government (Astin, 1982; Falk & Aitken, 1984; Guyette & Heth, 1984; Wright, 1985). Falk & Aitken (1984) found a significant relationship between years of retention in college and attendance at Native American student organization meetings.

Finally, one other factor that appears to positively affect satisfaction and persistence of Native Americans is attendance at a tribally controlled college. Stien (1992), in a study of student success at tribal colleges, found that enrollment for first-generation students at these colleges positively affect persistence and retention. The author suggests that the reasons for such success are attributed to focus by the colleges on the individual student, and the ability of the students to maintain their cultural identity.

In summary, the factors that appear to have an affect on Native American persistence are personal reasons, poor academic preparation and educational skills, language fluency, financial difficulties, institutional climate, lack of role models, cultural conflict, student support services and programs, and enrollment in tribal colleges.

Demographics of Native Americans in Higher Education

Only recently have data been collected and made available about Native Americans in higher education. Prior to the 1970's, the Census Bureau, reporting on enrollment figures for minority groups, included African-Americans and Hispanics only. Even now, information on Native Americans is fragmented and uncoordinated (Hodgkinson, 1990). Hodgkinson found that only four of the 1,487 tables from the Census Bureau's *Statistical Abstracts of the United States, 1990* reflect data on Native Americans. From the scarce data available on this population, this review will highlight how many are enrolled, where they are enrolled, and what they are enrolling in.

In 1966, enrollment of Native-American students was 1.6% of the Native population. With the creation of the twenty-four tribally controlled colleges, enrollment increased. Dramatic increases in enrollment growth in higher education leveled off in the 1980's, peaking in 1982 (Mingle, 1987). At the graduate level, enrollment peaked in 1980 and first time enrollment in professional programs has seen a 22% reduction since 1976 (Mingle, 1987).

Enrollment patterns do not match the increase of the population in general nor the increase in the college age cohort (Fries, 1987). The U.S. Bureau of the Census projects a 60% increase of the Native American population from 1980 to the year 2000. This has those who are interested in the state of this population concerned. Wright (1991) comments on the predicament saying that "despite significant advances,

American Indians and Alaska Natives remain among the least educated ethnic groups in the nation" (p. 5).

Astin (1982) reported that 23% of whites, 12% of African-Americans, and 7% of Hispanics have a college degree.
In comparison, only 6% of the Native population are degree holders. Recent reports indicate that "from 1981 to 1992 the number of American-Indian students earning degrees at all levels rose 46% to 10,883" (Gose, 1995, p. A23). This is still only 6% of the Native population based on the population total cited by the Bureau of the Census, 1990.

In the 1990 Census 1.9 million Americans claimed Native American status and over 5 million indicated Indian descent. According to figures from the U.S. National Center for Education Statistics, approximately 118,800 Native Americans in 1992 were enrolled in institutions of higher education (Statistical Abstracts of the United States, 1994). Of those, 58% were female and 42% were male.

Native American students are predominately enrolled in public institutions and the majority attend two-year colleges. In 1992, 88% of the total Native population were enrolled in public institutions. Fifty-four percent attended community colleges, compared to thirty-nine percent of all college students (Statistical Abstracts of the United States, 1994). The high proportion of Native American students enrolled in two-year colleges, as alluded to previously, is a matter of concern because research has shown that students who attend these institutions have low rates of transfer to four-year institutions (Mow & Nettles, 1990). Other

demographic data is noteworthy. Less than half are full-time equivalents. Increasingly, these students are attending part-time (Mingle, 1987).

More than half of Native Americans live in just six states: Oklahoma, California, Arizona, New Mexico, Alaska and Washington State (Hodgkinson, 1990). Thus, it is not surprising that the three states with the highest Native American student enrollment are California with 21,000 Native students, Oklahoma with 9,600 and Arizona with 8,200 (Hodgkinson, 1992). Most institutions have very small Native American populations.

The areas of study that Native Americans pursue are generally not very different from their white counterparts (Wright, 1991). In 1987, Native American students received 3,196 associate degrees, 3,971 bachelor's degrees, 1,104 master's degrees, 104 doctoral degrees and 304 first professional degrees (Hodgkinson, 1990). At the associate level, 25 percent of degrees awarded were in the field of Business and Management with another 25 percent in Liberal and General studies. The next most frequent field of study was in the Health Professions (10 percent). For those students receiving bachelor's degrees, the most frequent were in Business and Management (20 percent), Education (11 percent) and Social Sciences (12 percent). Master's degree recipients pursued generally the same fields as the undergraduates with nearly half receiving degrees in Business and Management (15 percent) and Education (34 percent). In addition, twelve percent were awarded master's degrees in public affairs. The two most common areas of study

in doctoral programs were in education (49 percent) and psychology (16 percent). Of the professional degrees awarded, half were in law.

In summary, available demographic data show that Native American students have low enrollments compared to the overall population, attend predominately two year, public institutions, and attend less than full-time. In addition, Native American women attend more than men. Finally, these students pursue fields of study that are in the public service sector and consequently are generally not high-wage jobs.

Background Data on Washington's Community Colleges

Because this is a study on a particular subgroup of students in Washington's community colleges, the researcher thought it was appropriate to briefly outline general characteristics of students in these community colleges. Included in this section is a summary of student demographic characteristics, students by purpose of attending, and the composition of college personnel by gender and ethnicity (Source: Washington Community and Technical Colleges, Academic Year Report, 1993-1994).

During the 1993-1994 academic year, there were a total of 438,281 students enrolled in the state's thirty-two community and technical colleges. Females (55%) outnumbered males (45%). In addition, 61% were enrolled part-time and 39% were enrolled full-time.

Of the total, 78% were white, 8% were Asian and Pacific Islander, 6% were Hispanic, 5% were African-American, and 2% were Native-American. Interestingly, it appears that Native American enrollment equals their proportion to the state's total population (2%).

Students were found to enroll for many purposes. Twenty-six percent were enrolled with the goal of transferring. The median age of this group was 19. About 47% were enrolled for workforce (vocational) related purposes. The median age of this group was 27. Six percent were enrolled in basic skills classes such as ABE, ESL, GED or high school completion. This group was older than the transfer students but younger than the workforce students. Another 21% did not specify a goal when they enrolled.

A lack of role models was found to be a predictor of success for students of color. An examination of the diversity of the college's personnel found that 15.9 % of the colleges support staff, 14% of administrative staff, 9.7% of full-time faculty, and 6.9% of part-time faculty were persons of color. Females were found to be in the majority of all of the above groups, except for full-time faculty (44.5%). It appears that the diversity of college personnel does not match that of the student population they serve.

Summary

Research on retention is a much studied phenomenon. A review of available literature on retention indicates that students of color experience institutions of higher education differently than their White counterparts. Furthermore, it appears that factors associated with persistence of students of color highlight experiences of encountering hostile environments and feelings of alienation and isolation. For Native American students who persist the least among students of color, cultural conflicts between maintaining their sense of cultural identity and assimilating into the mainstream culture are simply insurmountable.

CHAPTER THREE

METHODOLOGY

Introduction

This is a descriptive study designed to determine the persistence rates and those factors that affect persistence of Native Americans in community colleges in Washington State over a six year period (1988-1994). Specifically, what are the enrollment patterns of Native American students and are there differences along a multitude of variables between those who persist and those who do not. Fall to spring enrollment the first year was used as the measure of persistence. Non-persisters were measured by stop-out or drop-out activity. Such a definition of persisters was chosen because community colleges focus efforts to increase retention on a quarter by quarter basis, rather than from one academic year to the next (Bers & Smith, 1991). In addition, the first year of college is considered by researchers to be the most critical to future enrollment (Astin, 1982; Tinto, 1993).

Chapter three will detail the methods used for implementation of the study. The population and sample, data collection, and analysis of the data will be discussed.

Population and Sample

The target population is all current and future Native American students in community colleges. The sampling frame consisted of all Native Americans enrolled in community colleges in Washington State

during Fall quarter, 1988. This starting date was chosen because the researcher wanted to be able to follow a cohort over a period of four years or more. Longitudinal data is considered more useful in understanding enrollment patterns (Astin, 1982; Mow & Nettles, 1990; Nora, 1993).

Although including all Native American students would have contrived a larger sample (N=2,358), for the purpose of this study and based on a review of the literature, the researcher desired a sample that included only first-time college students. Thus, this study excluded students enrolled in Fall quarter, 1988, with credits from another college. This selection process created a final sample of 462 Native American students.

Data Collection

From a review of the literature, the researcher composed a list of desired variables for study to submit to the Washington State Board for Community and Technical Colleges (SBCTC) for data collection. The list was revised after a consultation with State Board staff to reflect the availability of existing data. The final list was submitted and the SBCTC accessed information previously gathered from students by the then state's twenty-eight community colleges to create the requested file.

A file containing data on all students who started in Fall quarter, 1988, was obtained from the SBCTC (N=27,056). Included on the file was data on a multitude of variables used in the study (see Appendix A).

There were a total of fifty-five variables and corresponding data on the original file. After a review of the file by the researcher, and after consultation with knowledgeable others on the contents of the file, twenty-one of the original fifty-five variables were found not useful for the purposes of the study. A total of 34 variables were determined useful for examination. Values for the variables were pre-assigned by the staff who compiled the data.

In order to determine how many Native American students were enrolled, a frequency was run on the ethnic variable using a statistical package called the Statistical Package for Social Sciences (SPSS). For students just starting college in Fall, 1988, 84.6% were white (N=21,759), 1.8% Native American (N=462), 2.9% African-American (N=746), 2.3% Hispanic (N=591), and 4.9% Asian or Pacific Islander (N=1,368).

Data Analysis

The variables were analyzed for like traits and placed in appropriate categories for study. These categories are student demographics such as age and gender, enrollment activity, retention or persistence rates and student progress. The analysis of the data was conducted in three phases. Phase One utilized common statistical measures such as means, standard deviations and percentages. Phase Two consisted of cross tabulations of particular variables such as gender and transfer rates. Phase Three consisted of t-tests and chi-square analysis.

CHAPTER FOUR

RESULTS

Introduction

This study investigated the progress of first-time Native American students in Washington's community colleges over a six-year period, beginning in Fall, 1988. In particular, the persistence rates of Native Americans were addressed. Similarities and differences between persisters and non-persisters on a multitude of variables were examined. Categories of examination include demographics, enrollment patterns, retention and student progress. This chapter will describe the research results.

Demographic Variables

The demographic characteristics for persisters (182), non-persisters (280), and the total population (462) are presented in Table 1. Overall, 264 (57%) students were female and 198 (43%) students were male. Results indicate that females persist at higher rates than males. Sixty-three percent of persisters were female; forty-three percent of all females in the cohort. In contrast, only thirty-seven percent of persisters were male; thirty-four percent of all males in the cohort.

The mean age of the total population was 25.87 and the standard deviation 10.84. Sixty-one percent (280) of the total were between the ages of sixteen and twenty-four years old. Non-traditional students (older than twenty-four) made up only thirty-nine percent (182) of the cohort with

twenty-six percent (120) over thirty years of age. Findings show that persisters were considerably younger than non-persisters. The mean age of persisters was 23.7 with a standard deviation of 9.4. The mean age of non-persisters was 27.3 with a standard deviation of 11.5. Over seventy-five percent (137 of 182) of persisters were twenty-four years old or younger. In contrast 51% (130 of 280) of non-persisters were thirty and above.

Of the original cohort, twenty-five students (5.4%) reported having a disability. Eighteen of the original twenty-five students, or seventy-two percent of students with disabilities were non-persisters. Seven or twenty-eight percent of the total were persisters.

Economic and academically disadvantaged students made up thirty-eight percent (173) of the total. Students who were economically disadvantaged were identified by their receipt of need based aid. Academically disadvantaged students were identified by their enrollment in developmental classes. The results indicate that persisters were more likely to receive need-based aid and less likely to be academically disadvantaged. Fifty-three percent of all students who received need based aid were persisters. Twenty percent of all persisters were economically disadvantaged. Less than twelve percent of non-persisters were determined to be economically disadvantaged. Fifty-three percent of all academically disadvantaged students were non-persisters.

TABLE 1: DEMOGRAPHICS OF PERSISTERS, NON-PERSISTERS AND TOTAL

	Persisters			Non-Persisters			Total		
Variables	M (SD)	N	%	M (SD)	N	%	M (SD)	N	%
Gender									
Female		114	62.6		150	53.6		264	57.1
Male		68	37.4		130	46.4		198	42.9
Age	24 (9)			27 (11)			26 (11)		
16-24		137	75.3		120	42.9		280	60.6
25-29		18	9.9		18	6.4		62	13.4
30 & above		27	14.8		142	50.7		120	26
Handicapped		7	3.8		18	6.4		25	5.4
Disadvantaged									
Economic[a]		37	20.3		33	11.8		70	15.2
Academic[b]		48	26.4		55	19.6		103	22.3

[a] Based on students who received need based aid.
[b] Based on enrollment in developmental classes.

Summary

Overall, findings show that the majority of the Native American student cohort is female (57%), and aged sixteen to twenty-four years of age (61%). Thirty-nine percent were twenty-five or older. Twenty-five (5%) students reported to have a disability, 103 students (22%) were determined academically disadvantaged and 70 (15%) students received need based aid.

Persisters were found to be traditional in age, predominately female, more likely to receive need based aid, and less likely to be enrolled in developmental courses. The results indicate that the majority

of non-persisters are thirty or above and a little less than half were male. Non-persisters are more likely to be academically disadvantaged and less likely to receive need based aid. In addition, of the total students with disabilities, over seventy-two percent were non-persisters.

Enrollment Patterns

Enrollment activity was examined by students' full and part-time status their first quarter, initial intent (goal commitment) upon enrollment and their intent at exit. The completion rate of specific college-level classes before leaving college was also examined (see Table 2).

Half of the total population was enrolled full-time (twelve or more credits) their first quarter of attendance. Significant differences were found between first-quarter enrollment status and persistence. More non-persisters (67%) than persisters (24%) were enrolled full-time. Chi-square analysis confirmed the statistical significance of enrollment status. A cross tabulation of persisters and non-persisters to part-time and full-time enrollment status indicated an association ($X^2 = 83.55$; $p<.01$). It is concluded therefore that enrollment status and persistence are significantly related.

Students' intents were categorized by academic, vocational, and developmental educational goals. Of the total population, 227 (49%) indicated a goal of achieving a vocational degree or certificate at the time of initial enrollment. Another 139 (30%) indicated their desire to earn an academic transfer or Associate's degree.

The third category of students indicated that they were enrolled for developmental reasons (8%). About 38% of the persisters enrolled with the intent of earning an academic degree, compared to 25% of non-persisters. Similarly, more persisters (51%) than non-persisters (48%) were pursuing vocational goals. Finally, the study found that more non-persisters (10%) than persisters (4.3%) were at the community college for developmental reasons.

An analysis of students' intents upon leaving is of interest. The research found that while persisters' educational goals increased the longer they were enrolled, non-persisters' educational goals decreased. For example, persisters at exit reported a two percent increase of those planning to transfer, compared to no change in non-persisters. Likewise, results indicated a one percent decrease for persisters with developmental intents compared to a one percent increase in the intents of non-persisters to enroll for developmental reasons. Further, there was about a four percent decrease among those reporting a vocational intent at time of exit for non-persisters.

The completion rate for the first or second college-level English class or college-level math class before leaving college was explored. One third of the total population completed the first college-level English class, 18% completed the second college-level English class and 14% completed a college-level math class before leaving college.
The results indicate an important distinction between non-persisters and persisters and completion rates of specific college-level classes.

Although 33% of the total completed the first level English class, over 56% of persisters and only 18% of non-persisters completed the course. Moreover, persisters completed the second college-level English at a rate of nearly 30% compared to the completion rate for non-persisters of 10%. The pattern is the same for completion rates of college-level math. Forty-five percent of persisters and roughly six percent of non-persisters completed a college-level math class.

TABLE 2: ENROLLMENT VARIABLES

	Persisters		Non-Persisters		Total	
Variables	N	%	N	%	N	%
Status						
Full-time (≥12cr)	43	23.6	188	67.1	231	50
Part-time (<12cr)	139	76.4	92	32.9	231	50
Initial Intent						
Academic	69	37.9	70	25	139	30
Vocational	92	51.5	135	48.2	227	49
Developmental	8	4.3	29	10.4	35	8
Exit Intent						
Academic	72	39.6	70	25	142	31
Vocational	94	51.5	124	44.3	218	47
Developmental	6	3.3	32	11.4	39	9
Clvl Courses[a]						
English 1	91	56.2	47	18.1	138	33
English 2	48	29.6	26	10	74	18
Math	45	27.8	15	5.8	60	14

[a]Frequencies and percentages do not reflect the groups (N's).
Two colleges (40 students) were excluded from analysis based on unavailable data.

Summary

The study revealed that persisters were more often enrolled part-time, had higher educational aspirations both initially and when they left the institution, and had higher completion rates for both first and second college-level English and college-level math classes than non-persisters.

Persistence and Retention

The study focused its retention research on the total quarters enrolled over a six-year period beginning in Fall, 1988. The study presented the percentages of the three groups and the overall population percentages of students persisting at the end of one quarter through the end of five years.

Table three presents data on the total quarters enrolled for the three groups in the study. The study reveals that for all three groups the total number of quarters enrolled were low. The mean number of quarters enrolled for the entire Native American population was 3.66 with a standard deviation of 3.14 for the entire Native American population. The difference in means between persisters and non-persisters is important. The mean number of quarters for persisters and non-persisters were 5.99 and 2.14 respectively.

TABLE 3: TOTAL QUARTERS ENROLLED OVER A SIX YEAR PERIOD

Groups	Mean	Standard Deviation	Range
Persisters	5.99	3.16	14
Non-Persisters	2.14	2	10
Total	3.66	3.14	16

Another subset of categories was used to examine retention (see Table 4). These categories are *early leavers,* students who enrolled for only one quarter over the six year period; *some progress,* those who enrolled for two or three quarters over a six-year period; and *substantial progress*, those students enrolled in the college for four or more quarters over the six-year period. These categories were originally used for analysis over a two-year period by researchers at the Washington State Board for Community and Technical Colleges. The time frame of analysis using these categories was changed for the purpose of this study.

Of the total population, 34% were found to be early leavers, 30% had made some progress, and 36% had made substantial progress, completing four or more quarters over the six-year period. Another difference identified was between persisters (69%) and non-persisters (15%) who had made substantial progress. Although non-persisters did not complete three consecutive quarters their first year of enrollment, 15% did make substantial progress by enrolling four or more quarters over the course of six years. Thus, some of those students are

considered stop-outs instead of drop-outs because they came back sometime during those six years.

TABLE 4: GROUP PERCENTAGES BY QUARTERS ENROLLED

Progress	Persisters	Non-persisters	Total
Early Leavers	0	56	34
Some Progress	31	29	30
Substantial Progress	69	15	36

Results shown in table 5 indicate the overall persistence or retention rates of the Native American cohort examined in this study. The findings exhibit that 33% left after only one quarter of enrollment and never returned during the six-years of the study. Thus, 66% remained after one quarter. Forty-two percent remained after one year, and 27% after two years. Another 17% remained after three years. Finally, one percent of the total persisted more than five years.

TABLE 5: PERSISTENCE OF TOTAL COHORT OVER SIX YEAR PERIOD

Years Enrolled	%
Persisted more than one quarter	66
Persisted more than one year	42
Persisted more than two years	27
Persisted more than three years	17
Persisted more than four years	9
Persisted more than five years	1

Student Progress

The researcher sought to investigate students' progress after enrollment because the literature found that what happens to a student after enrolling in the institution is critical to student persistence and success. Variables examined for this category included college-level grade point average their first quarter of enrollment, college-level credits earned and attempted, whether students earned Associate's degrees or certificates during the six year study period, and, finally, how many Native American students transferred to four year colleges or universities within four years (see Table 6). Although the transfer variable only includes transfer within Washington state, it was considered valid for study because of the tendency for Native Americans to stay close to home (Wright, 1991).

The first measure of student progress is students' grade point average at the end of their first quarter. Statistical differences were found between the means of persisters and non-persisters on this variable. The mean grade point average of persisters was 2.13 (C+) and the mean grade point average of non-persisters was 1.32 (D+). A random sample of 30 students was taken from the persisters and non-persister groups. An independent t test was used to examine mean grade point average differences between the groups. The results indicate a significant difference ($t=2.08$; $p<.05$) between the grade point average of persisters and non-persisters .

A second measure of progress is the completion rate of credits earned over credits attempted. For the total, the mean for credits earned was 23.68 and the mean for credits attempted was 24.68 (see Table 6). Thus, the credit completion rate was at 96% of credits attempted. Research results show that persisters had a higher credit completion rate. The rate of completion for persisters was 97% compared to 92% for non-persisters.

Only 37 (8%) students of the entire cohort of 462 earned Associate degrees and only 7 (1.5%) earned certificates. Females (62%) outnumbered male (38%) degree earners. Similarly, 71% of the certificates were awarded to females. Among degree earners, 84% of those were under the age of 25. Of those who received certificates, 86% were 25 years of age or older. Some 92% of the Associate degrees given out went to persisters. Likewise, persisters were found to earn all (100%) of the certificates awarded during the six-year period of study. Chi-square analysis indicated no significant differences between persisters and non-persisters on degrees or certificates earned (X^2=.61). However, given the numbers, the differences are still of importance.

Finally, in considering student progress, the researcher examined the rate of transfer to baccalaureate institutions within four-years. Nine percent of the total cohort were found to have transferred to baccalaureate institutions in Washington State within four years, and 57% of those who transferred were females. The raw rate of all students who entered community colleges in Washington State in Fall, 1988 with

no prior college credits show a 13% transfer rate. In addition, the study found that 63% of those who earned transfer degrees transferred. Furthermore, more persisters (18%) than non-persisters (4%) transferred. Interestingly, a cross tabulation of the sample of the Native American cohort who reported an initial intent of academic transfer by actual transfer reveals that 17% (24) did transfer.

TABLE 6: STUDENT PROGRESS

	Persisters			Non-Persisters			Total		
Variables	M (SD)	N	%	M (SD)	N	%	M (SD)	N	%
College GPA	2.13 (1.14)			1.32 (1.5)			1.64 (1.42)		
College Credits									
Earned	47.66 (40.65)			8.1 (16.87)			23.68 (24.66)		
Attempted	49.07 (39.78)			8.82 (16.94)			24.68 (34.39)		
Completion Rt.			97			92			96
Completion									
Assoc. Degree		34	19		3	1.1		37	8
Certificate		7	3.8		0	0		7	1.5
Transfer 4YR		32	18		10	3.6		42	9.1

Other Findings

The study's findings indicate that roughly 34% left after one quarter, never to return to Washington community colleges within the six year study period. Upon discovering these results, the researcher sought to determine the characteristics of such an important group. A listing of such characteristics are presented in Appendix B. A preliminary overview reveals that this group is older than the overall population, with

a mean of 29, and that 59% indicated a desire to earn an academic transfer degree or a vocational degree or certificate. Over fifty percent of all students who reported having a disability were among this group of early leavers. Further, it was found that the mean first quarter grade point average of this group was .899, compared to the mean for persisters of 2.13.

Summary

The results of the study indicate that the persistence rates of Native Americans were low and differences exist between persisters and non-persisters among the variables studied. Factors that were found to be related to persistence were gender, age, enrollment status, educational aspirations and college grade point average during the first quarter of community college enrollment. It was concluded that enrollment status and persistence were significantly related. Results also found a significant difference between grade point averages of persisters and non-persisters.

CHAPTER FIVE
DISCUSSION

Introduction

This section will discuss the research findings, discuss the implications of such findings, examine the limitations of the study, and offer suggestions for further research. Several conclusions will be offered based on the results and on the review of literature.

Discussion of Findings

The purpose of this study was not only to provide a descriptive document on the characteristics and progress of Native American students in community colleges in Washington State (currently non-existent), but it also sought to determine the persistence rates of this group and to identify those factors which were related to persistence in higher education.

The persistence rates of first-time Native students were found to be low. The results of the study indicated that the persistence rates were similar to previous studies on retention of Native Americans. Sixty-six percent persisted more than one quarter, and 42% persisted more than one year. Wells (1989) in a survey of roughly 80 colleges and universities with high concentrations of Native American students reported that over half left during the first year of college.

Those factors found to be related to persistence were gender, age, educational aspirations, enrollment status, and the college grade point average. Also, students who persisted were found to have received need based aid more frequently and were less likely to be enrolled in developmental classes. All of these factors have been found to be related to persistence in past retention literature.

First, the findings found that those who persist were female and under the age of twenty-five. Patton & Eddington (1973) reported like findings. In their study of a large sample of Native Americans at two southwestern universities, two of the factors found to be statistically related to persistence were age (younger) and sex (female). What explanations can be given for these results? One conclusion that can be drawn regarding the age factor is that the younger students have not been out of the educational environment as long as the older students have been and thus their skills have not had time to deteriorate. Or, the results could suggest that because the younger students have not been out of the system for as long, they may find the environment of the institution to be 'normal' and may be less sensitive to racial bias and hostility than older students who may be less accustomed to such an environment and less willing to tolerate such a climate.

Another factor found significantly related to persistence in Patton & Eddington's study (1973) was the college grade point average. Again, this finding is similar to the findings in the present study where a

significant association was found between the college grade point average and persistence. This finding seems rather logical since those who do well, stay. The questions to ask that are more important, however, is what factors were associated with such poor academic performance? Were there no academic support services available to assist those at risk? Did those who were found to not persist, have other familial obligations that precluded attendance in class, thus affecting their academic outcome? Were the teaching styles incongruent with the students' learning styles?

The most surprising discoveries in the study was the statistically significant relationship ($p<.01$) found between persistence and enrollment status. Previous research had indicated that full-time enrollment status was positively associated with persistence among Native American students as well as students in general (Astin 1982; Tinto, 1987, 1993). However, this study's findings show the opposite results. Of those who persisted, over 75% were found to be enrolled part-time their first quarter of attendance. It can be speculated that those who were enrolled part-time were also working part-time and thus were forced to prioritize their responsibilities and manage their time more efficiently. It can also be speculated that the part-time students were more motivated to stay and persist. Another possible conclusion is that those who were enrolled only part-time were less pressured to assimilate into the mainstream culture. Moreover, they were better able to maintain their cultural identity.

Students who persisted three consecutive quarters their first year of enrollment were found to receive need based aid more frequently than non-persisters. What conclusions can be drawn from such results? Perhaps one conclusion that can be drawn is that those who received need based aid had access to information on financial aid from supportive friends or family or community members who had some knowledge about the application process. Such conclusions imply that non-persisters probably had just as much of an economic need as that of persisters, but did not have access to the critical information needed to receive such aid. Mendoza & Samuels (1987) findings from an evaluation of intervention activities at a community college in Arizona suggest that first-time students of color who do not apply for financial aid are at greater risk for attrition.

Implications

Since the persistence and transfer rates for this underrepresented population are so low, there are many implications of this study for Student Affairs professionals and other educators interested in the higher education enterprise for this population. Some indications were provided that Native American students may have difficulty initially adjusting to college, which has been shown to be particularly crucial to persistence. An examination of current intervention activities such as academic advising and counseling toward Native American students in their first quarter of enrollment must be reviewed to determine

appropriate actions for improvement. In addition, it appears that community education on available financial resources would be helpful to those students who might not otherwise receive such critical information.

Furthermore, the findings suggest a need for strategies focusing on the retention of those Native American students older than twenty-five years of age, who appear to need the greatest assistance to persist.

Limitations

There are two potential limitations to this study. Using existing data as one's base could be a limitation, since the data collected may have been intended for an entirely different purpose than that of the study. Second, it must be remembered that the Native American people are not a homogenous group. Therefore, the study population and the study results are perhaps regionally influenced and may not necessarily be reflective of the rest of the United States' indigenous populations who may have different relationships with the dominant society.

Suggestions for Further Research

Because so little research has focused efforts on understanding the persistence of Native American students and those factors related to persistence in higher education, there is still much left to do and know. The following recommendations for further research represent the nature of information still to gather and understand.

First, because of the cultural differences of the study population, it would be helpful to conduct a qualitative study with those who persisted and with those who did not, to gather more meaningful reasons for their decisions to stay or depart.

Secondly, studies on institutional satisfaction should be conducted with this population to determine to what extent they experience hostility and feelings of alienation and isolation.

Third, it would be beneficial to determine the current existence of student support programs in the state that focus efforts on retaining such an important population and the effectiveness of such programs from the Native students' point of view.

Fourth, the study found that 72% of students with disabilities left after their first quarter of enrollment. Such findings would suggest that inadequate accomodations were in place to assist these students to persist. A follow up study consisting of personal interviews would help to explain such a phenomenon.

Fifth, the study found that fewer than 10% of the total population, transferred to a four-year college or university. The questions to be explored are: What factors contribute to transfer for these students? How many eventually attain bachelor's degrees?

Finally, community colleges, because of their mission to assist students who might not otherwise attend college, are in a unique position to contribute to improving the education of this group. Over 50% of Native American students are enrolled in these institutions.

Research is needed that focuses on Native Americans and persistence in two-year colleges. Such research is not only important to the Native population but to the nation as a whole.

Summary

The most underrepresented of the targeted minority group in higher education today is the Native American. Researchers have indicated that the education of this population is dismal. The results of this study on 462 first-time Native college students in Washington State confirm such indications. Developing new techniques to increase the retention of Native American students is an important challenge to higher education.

The outcomes of this study have given educators a better understanding of the persistence patterns of this forgotten population and possible causal factors that affect such persistence. It will be up to all of those who care about the education of this population to invest in efforts to assist these students to persist and maintain their cultural identity in the process.

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APPENDIX A

VARIABLES USED IN STUDY

VARIABLES USED IN THE STUDY (N=462)

DEMOGRAPHIC VARIABLES	**M**	**SD**	**N**	**%**
Age	25.866	10.842		
Gender				
Female			264	57.1
Male			198	42.9
Handicapped			25	5.4
Disadvantaged				
Economic			70	15.2
Academic			103	22.3

ENROLLMENT/ PERSISTENCE/ RETENTION VARIABLES		
Educational Aspirations		
Student Intent First Quarter		
1. General Studies, Degree or Certificate	38	8.2
2. Academic Transfer	139	30.1
3. Adult Basic Education	15	3.2
4. High School Diploma, GED Certificate	20	4.3
5. Developmental	2	0.4
6. Vocational Preparatory	93	20.1
7. Vocational Preparatory, Applicant	16	3.5
8. Vocational Apprentice	10	2.2
9. Vocational Supplemental	50	10.8
10. Vocational Home and Family Life	20	4.3
11. General Studies- Non-degree or certificate	33	7.1
12. Undecided, None of the Above, Not reported	26	5.6
Student Intent Last Quarter		
1. General Studies, Degree or Certificate	28	6.1
2. Academic Transfer	142	30.7
3. Adult Basic Education	11	2.4
4. High School Diploma, GED Certificate	23	5
5. Developmental	5	1.1
6. Vocational Preparatory	98	21.2
7. Vocational Preparatory, Applicant	13	2.8
8. Vocational Apprentice	9	1.9
9. Vocational Supplemental	50	10.8
10. Vocational Home and Family Life	20	4.3
11. General Studies- Non-degree or certificate	35	7.6
12. Undecided, None of the Above, Not reported	16	3.4

VARIABLES USED IN THE STUDY (N=462)

Enrollment Status		
Full-time	231	50
Part-time	231	50
College-Level Courses		
English 1	138	33
English 2	74	18
Math	60	14
Last Quarter/Year of Attendance		
Fall, 1988	156	33.8
Winter, 1989	39	8.4
Spring, 1989	72	15.6
Summer, 1989	7	1.5
Fall, 1989	17	3.7
Winter, 1990	17	3.7
Spring, 1990	29	6.3
Summer, 1990	4	0.9
Fall, 1990	11	2.4
Winter, 1991	12	2.6
Spring, 1991	17	3.7
Summer, 1991	12	2.6
Fall, 1991	11	2.4
Winter, 1992	10	2.2
Spring, 1992	8	1.7
Summer, 1992	5	1.1
Fall, 1992	4	0.9
Winter, 1993	8	1.7
Spring, 1993	18	3.9
Summer, 1993	5	1.1
Fall, 1993	0	0
Winter, 1994	0	0
Spring, 1994	0	0
Enrollment Patterns		
1988-1989		
Enrolled Fall only	203	43.9
Enrolled Fall and Spring	7	1.5
Enrolled Fall and Winter	70	15.2
Enrolled Fall, Winter, Spring	182	39.4

Total Quarters Enrolled in 1988-1989		
Zero		
One	203	43.9
Two	77	16.7
Three	182	39.4
Four		
1989-1990		
No enrollment	310	67.1
Enrolled Fall only	25	5.4
Enrolled Fall and Spring	5	1.1
Enrolled Fall and Winter	16	3.5
Enrolled Fall, Winter, Spring	56	12.1
Enrolled Winter only	6	1.3
Enrolled Winter and Spring	3	0.6
Enrolled Spring only	7	1.5
Enrolled Summer only	11	2.4
Enrolled Summer and Spring	1	0.2
Enrolled Summer and Fall	3	0.6
Enrolled Summer, Fall, Winter	3	0.6
Enrolled Summer, Fall, Winter, Spring	16	3.5
Total Quarters Enrolled in 1989-1990		
(Not Available)		
1990-1991		
No enrollment	369	79.9
Enrolled Fall only	18	3.9
Enrolled Fall and Spring	2	0.4
Enrolled Fall and Winter	12	2.6
Enrolled Fall, Winter, Spring	29	6.3
Enrolled Winter only	4	0.9
Enrolled Winter and Spring	5	1.1
Enrolled Spring only	7	1.5
Enrolled Summer only	6	1.3
Enrolled Summer and Fall	2	0.4
Enrolled Summer, Fall, Winter	1	0.2
Enrolled Summer, Fall, Winter, Spring	7	1.5
Total Quarters Enrolled 1990-1991		
Zero	369	79.9
One	35	7.6
Two	21	4.5
Three	30	6.5
Four	7	1.5

1991-1992		
No enrollment	397	85.9
Enrolled Fall only	12	2.6
Enrolled Fall and Spring	2	0.4
Enrolled Fall and Winter	7	1.5
Enrolled Fall, Winter, Spring	11	2.4
Enrolled Winter only	6	1.3
Enrolled Winter and Spring	5	1.1
Enrolled Spring only	4	0.9
Enrolled Summer only	11	2.4
Enrolled Summer and Spring	2	0.4
Enrolled Summer and Fall	2	0.4
Enrolled Summer, Winter, Spring	2	0.4
Enrolled Summer, Fall, Winter, Spring	1	0.2
Total Quarters Enrolled in 1991-1992		
Zero	397	85.9
One	35	7.6
Two	16	3.5
Three	13	2.8
Four	1	0.2
1992-1993		
No enrollment	425	92
Enrolled Fall only	3	0.6
Enrolled Fall and Spring	1	0.2
Enrolled Fall and Winter	3	0.6
Enrolled Fall, Winter, Spring	10	2.2
Enrolled Winter only	5	1.1
Enrolled Winter and Spring	4	0.9
Enrolled Spring only	2	0.4
Enrolled Summer only	5	1.1
Enrolled Summer, Fall, Winter	1	0.2
Enrolled Summer, Fall, Winter, Spring	3	0.6
Total Quarters Enrolled in 1992-1993		
Zero	425	92
One	15	3.2
Two	8	1.7
Three	11	2.4
Four	3	0.6

1993-1994		
No enrollment	430	93.5
Enrolled Fall only	3	0.6
Enrolled Fall and Winter	4	0.9
Enrolled Fall, Winter, Spring	8	1.7
Enrolled Winter only	3	0.6
Enrolled Winter and Spring	3	0.6
Enrolled Spring only	6	1.3
Enrolled Summer only	3	0.6
Enrolled Summer, Fall, Spring	1	0.2
Enrolled Summer, Fall, Winter, Spring	1	0.2
Total Quarters Enrolled in 1993-1994		
Zero	430	93.1
One	15	3.2
Two	7	1.5
Three	9	1.9
Four	1	0.2
Total Quarters Enrolled Overall		
One	157	34
Two	64	13.9
Three	74	16
Four	34	7.4
Five	23	5
Six	32	6.9
Seven	18	3.9
Eight	12	2.6
Nine	13	2.8
Ten	10	2.2
Eleven	13	2.8
Twelve	7	1.5
Thirteen	1	0.2
Fourteen	2	0.4
Fifteen	0	0
Sixteen	1	0.2
Seventeen	1	0.2

VARIABLES USED IN THE STUDY (N=462)

STUDENT PROGRESS	**M**	**SD**	**N**	**%**
College GPA	1.64	1.42		
Credits Earned				
College Level				
Earned	23.69	34.59		
Attempted	24.68	34.39		
Cumulative				
Earned	29.34	37.67		
Attempted	29.83	N/A		
Exit Code				
Associate Degree			37	8
Certificate			7	1.5
No degree or certificate			418	90.5
College Level 18 (Students who completed a min. of 18 credits of college level)				
Yes			154	33.3
No			308	66.7
College Level 40 (Same as above but 40 credits)				
Yes			97	21
No			365	79
Transfer to a Community College			391	84.6
Transfer to a Four Year College			42	9.1
Quarter/Year Transferred to Four Year				
Fall, 1990			13	2.8
Winter, 1991			1	0.2
Spring, 1991			8	1.7
Fall, 1992			11	2.4
Winter, 1992			2	0.4
Spring, 1992			2	0.4
Fall, 1993			1	0.2
Winter, 1993			2	0.4

APPENDIX B

VARIABLES	M	SD	N	%
Age	29.04	12.61		
Gender				
Female			80	
Male			77	
Disadvantaged				
Economic			13	18.3
Academic			29	18.5
Handicapped			13	8.3
Educational Aspirations				
1. General Studies (Degree or Certificate)			28	6.1
2. Academic Transfer			142	30.7
3. Adult Basic Education			11	2.4
4. High School Diploma, GED Certificate			23	5
5. Developmental			5	1.1
6. Vocational Preparatory			98	21.2
7. Vocational Preparatory, Applicant			13	2.8
8. Vocational Apprentice			9	1.9
9. Vocational Supplemental			50	10.8
10. Vocational Home and Family Life			20	4.3
11. General Studies, Non-degree or certificate			35	7.6
12. Undecided, None of the Above, Not Reported			16	3.4
Credits Earned				
College Level				
Earned	2.5	4.15		
Attempted	2.8	4.9		
Cumulative				
Earned	3.51	4.92		
Attempted	3.99	5.82		
Transfer to a Community College			22	9.6
Transfer to a Four Year			1	0.6
Enrollment Status				
Full-time			43	27.4
Part-time			114	72.6